

2010 Coalition Battle Management Language (C-BML) WORKSHOP



MSG-079

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EXTENDING BML TO CRISIS MANAGEMENT



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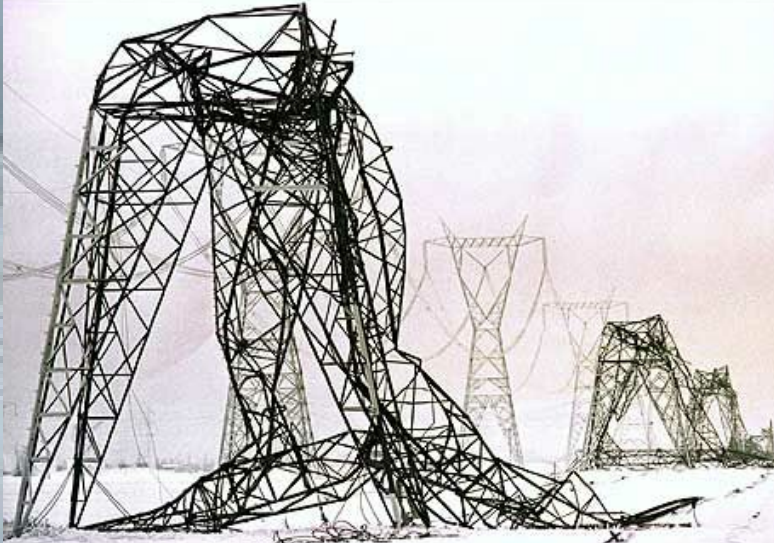
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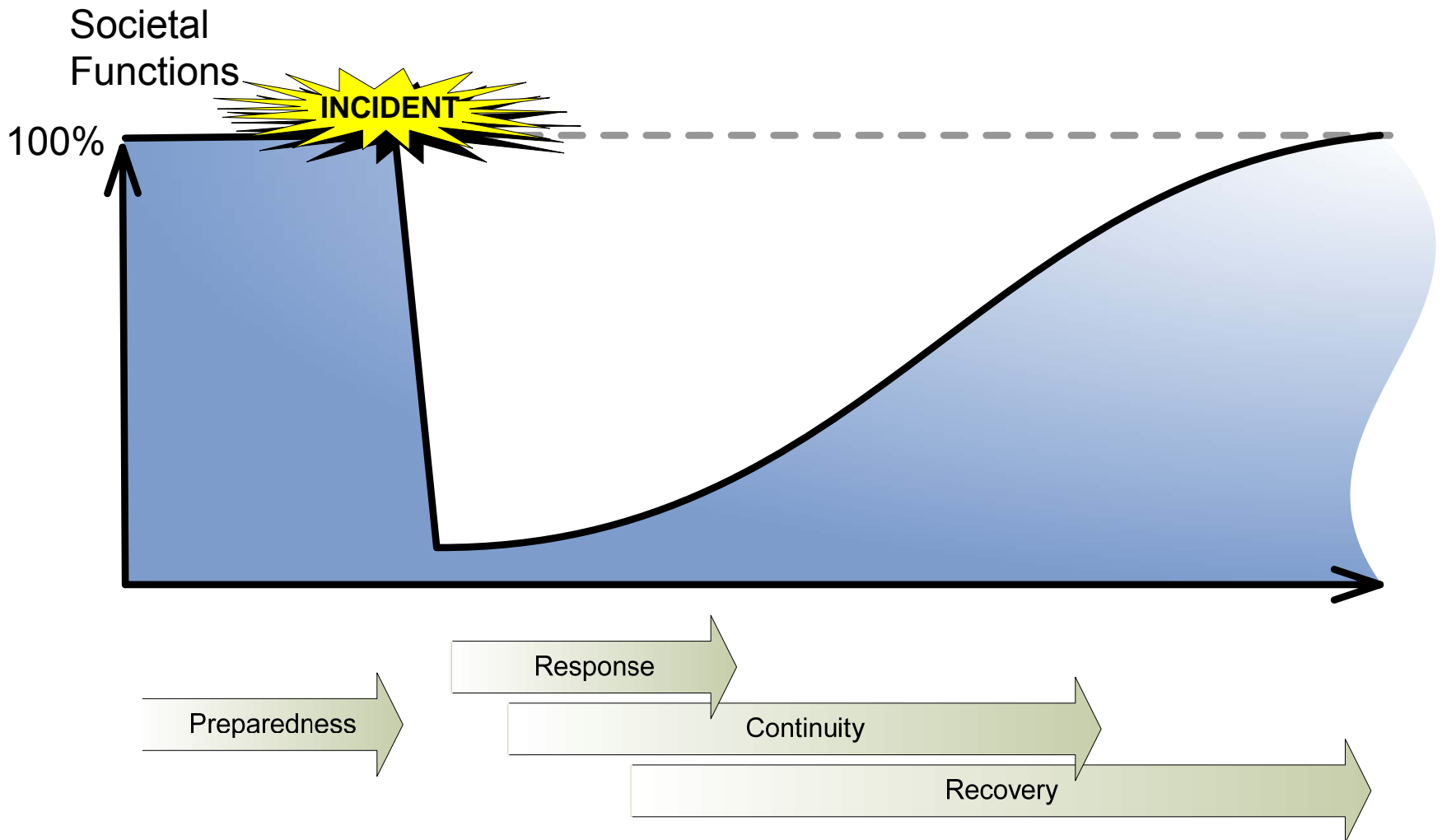
OUTLINE

- The Challenge
- An Example
- Way Ahead

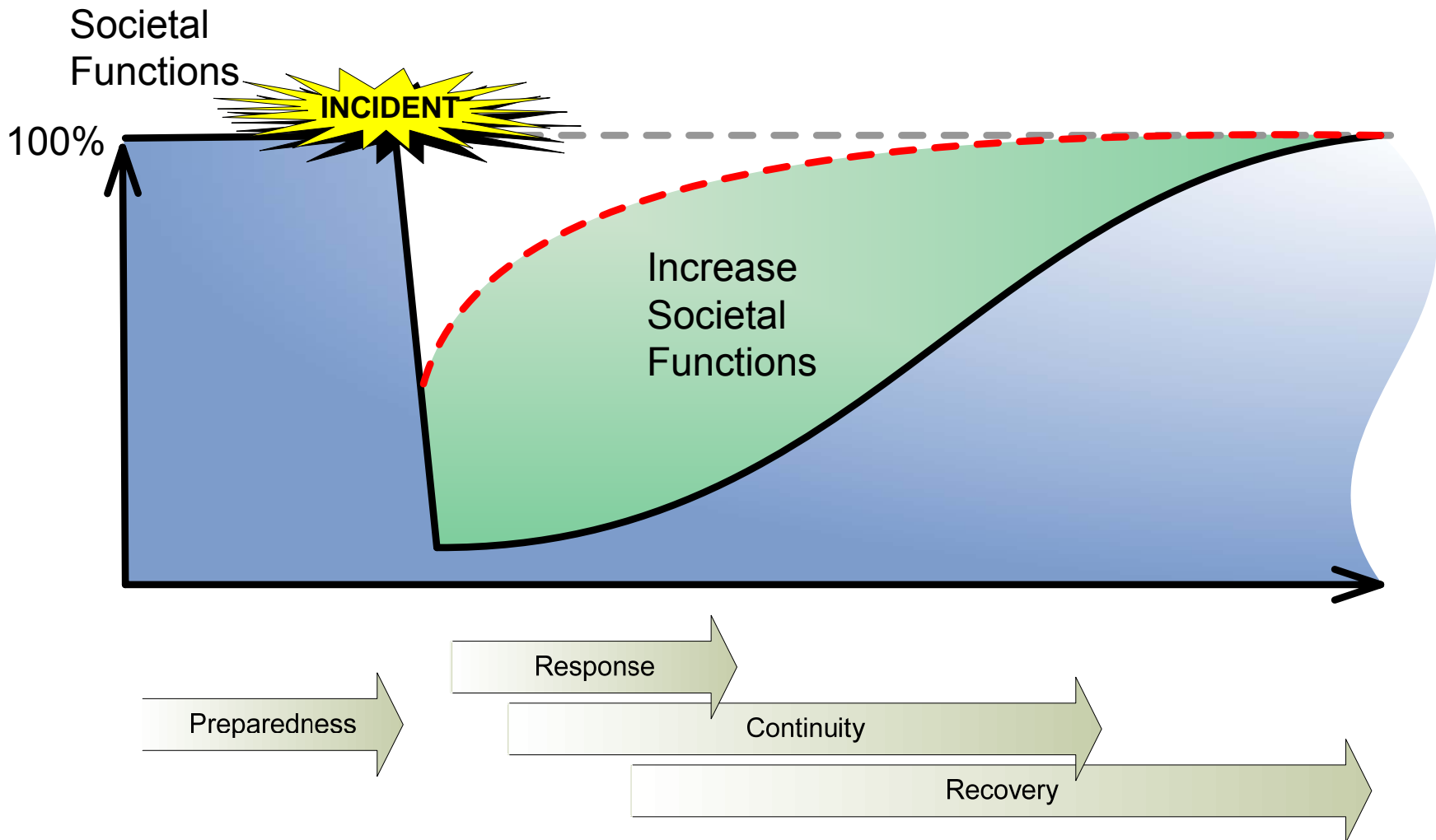




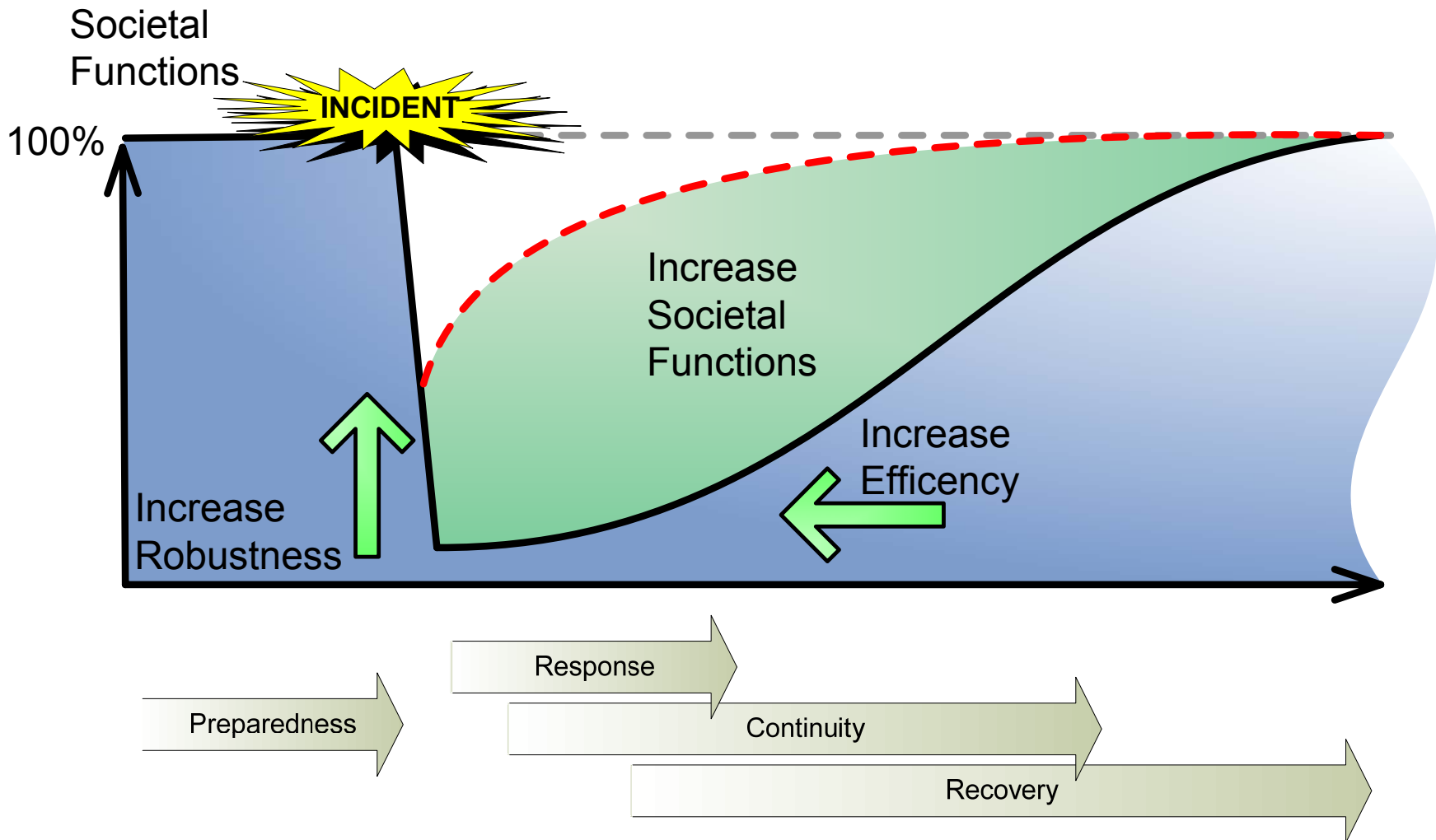
THE GOAL ...



THE GOAL



THE CHALLENGE



AN OPERATIONAL CHALLENGE ...

▶ (SNOW) STORM / FLOODING

- Rescue Services
- Police
- Municipal offices
 - Engineering Council
 - Health Care
 - School Office
 - Residential Care
- County Offices
- Radio Stations
- Swedish National Road Administration (SNRA)
- Energy Utility Companies
- Local Transportation (Västtrafik)
- Swedish Railway Administration (SRA)
- National Defence

▶ TSUNAMI / EARTH QUAKE

- Civil Contingencies Agencies (SCCA/FEMA ...)
- United Nations
- UNICEF
- Governments
- National Defence
- Companies
- Non Governmental Agencies

Example Agencies: Action Against Hunger, Agape Flights, Airline Ambassadors International American Refugee Committee, American Jewish Joint Distribution Committee, American Jewish World Service, AmeriCares, Beyond Borders, B'nai B'rith International, CARE, Carma Foundation , Catholic Relief Services, Childcare Worldwide, Church World Services, Clinton Foundation, Clinton Bush Haiti Fund, Concern Worldwide, Convoy of Hope, Cross International, CRUDEM Foundation, CRWRC, Direct Relief International, Episcopal Relief and Development, Feed My Starving Children, Food for the Poor, Friends of WFP, Friends of the Orphans, Habitat for Humanity, Haiti Children, Haiti Foundation Against Poverty, Haiti Marycare, ...

A TRAINING CHALLENGE ...

➤ Civil Crisis Management Training

- Often: **low frequency**, once a year
- Ought to be: **ongoing process**

➤ Risk Analysis

- Often: **small set of important risks**
- Ought to address: **any crisis, large and small**

➤ Exercises for emergency management

- Often: tend to focus on **information handling** and **decision making** in scenarios for a **major crisis**
- Ought to address: **discern** between a **harmless** incident and a **major** crisis when the first signals arrive
- Often: aim at **central management** at the headquarters of an organization,
- Ought to address: **lower levels** in the organization where signals, and expertise often are available
- Often: require large staff to execute exercises
- Ought to be: less demanding of resources

THE CHALLENGE IS COORDINATION AND COOPERATION

➤ Coordination of responsibilities

- Many agencies and other actors involved
- All have small part of overall responsibility
- No unity of command/direction, no central control

➤ Developing shared picture of the crisis situation and communicating that understanding with other crisis actors, the media and the public

- Everybody collects their own information
- Shared information may not mean shared image of crisis
- Need to select important information & update it continuously
- Can conflicting views & dedicated information be accommodated?

INFORMATION EXCHANGE STANDARDS

➤ MIP

- Multilateral Interoperability Program
- JC3IEDM – Joint Consultation Command and Control Information Exchange Data Model (MIP)
- **Does not cover civil crisis vocabulary**

➤ OASIS-Open

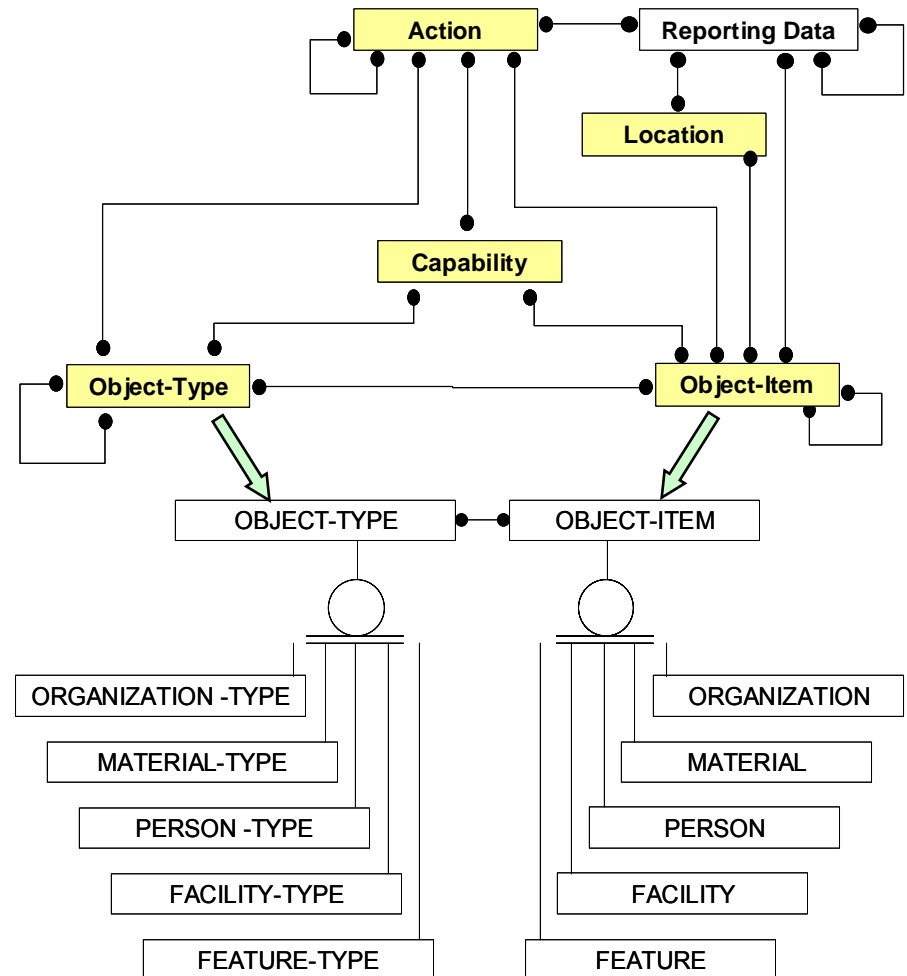
- Organization for the Advancement of Structured Information Standards
- CAP – Common Alert protocol
- EDXL – Emergency Data eXchange Language
- **Does not cover missions**

➤ OASIS-FP6 / CEN WS-ISED

- **Open Advanced System for disaster and emergency management - Sixth Framework Programme (EU)**
- Comité Européen de Normalisation – Work Shop . Information System for Disaster and Emergency Management
- TSO – Tactical Situation Object
- **Contains the Basis for a Crisis Management Language (CML)**
 - **Covers vocabulary (has the same role as JC3IEDM for C-BML) and has missions**

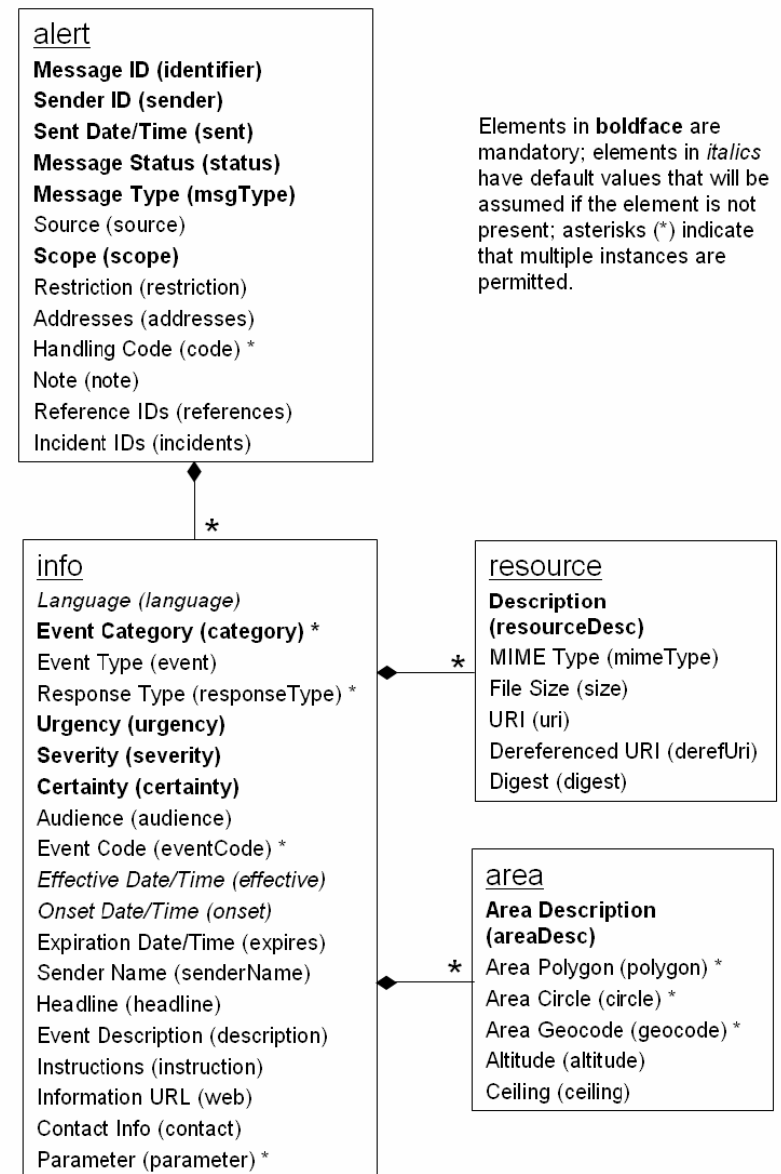
JC3IEDM MIP

- Comprehensive
- Designed for Extension
- Very well documented
 - Tables
 - Attributes
 - Relations
 - Extension rules
 - Business rules
- Based on
 - agreed Doctrine and
 - Information Exchange Requirements



Common Alert Protocol OASIS-Open

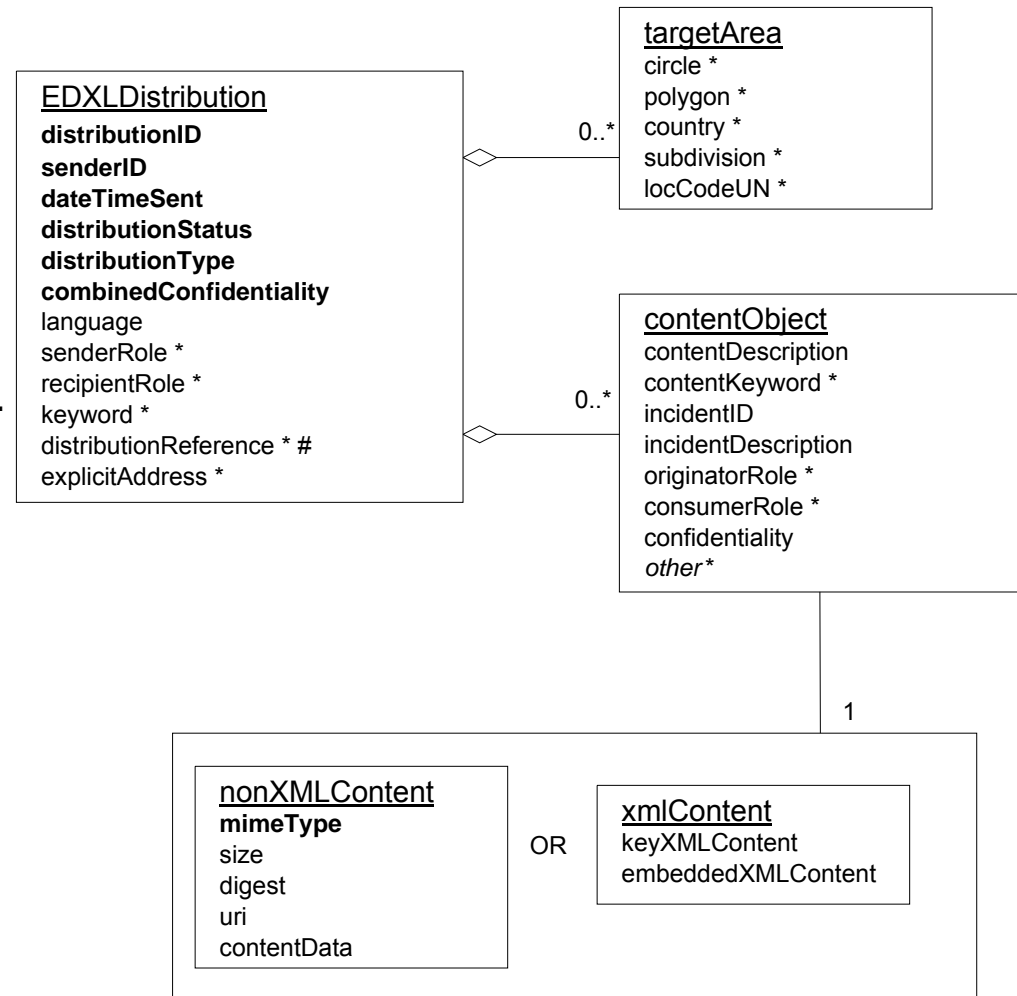
- The Common Alerting Protocol (CAP)
- Open, non-proprietary digital message format for all types of alerts and notifications.
- It does not address any particular application or telecommunications method.
- The CAP format is compatible with emerging techniques, such as Web services, as well as existing formats including the Specific Area Message Encoding (SAME) used for the United States' National Oceanic and Atmospheric Administration (NOAA) Weather Radio and the Emergency Alert System (EAS).



Emergency Data eXchange Language

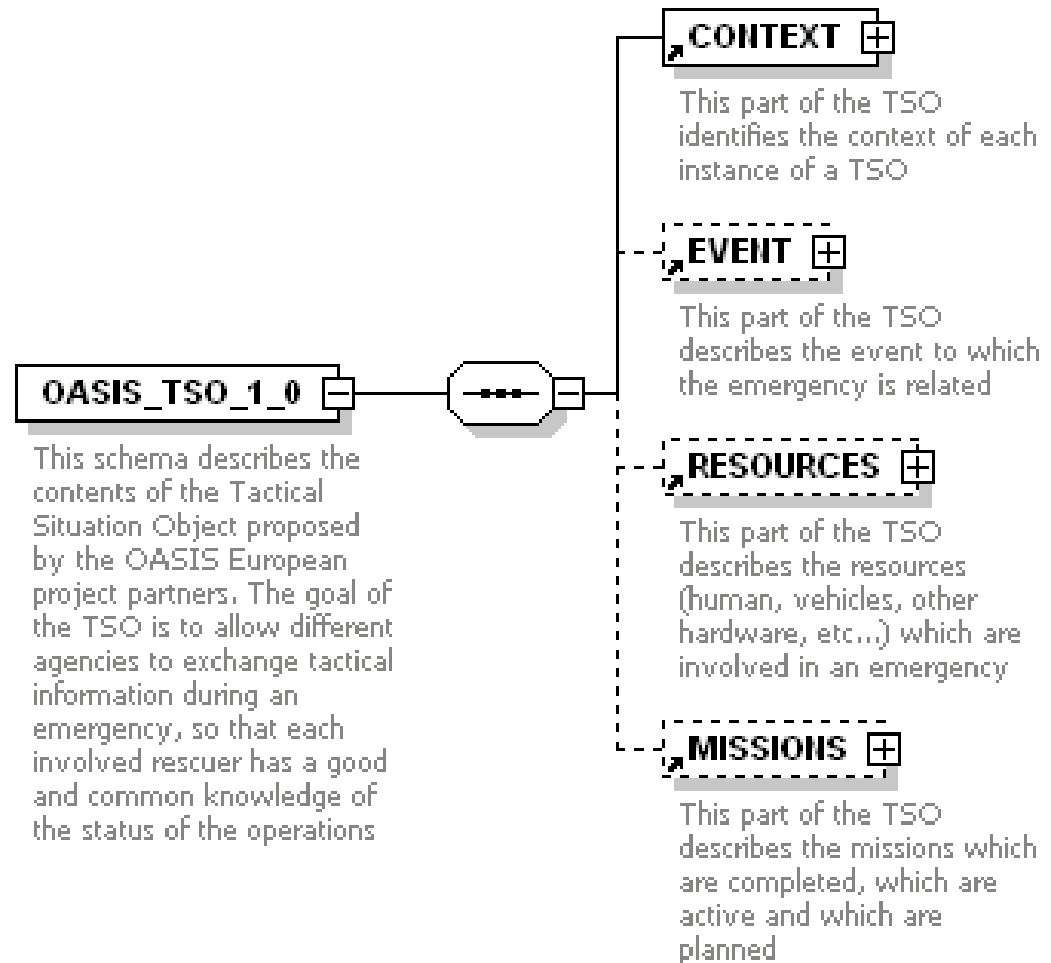
OASIS - Open

- Facilitate the routing of any properly formatted XML emergency message to recipients.
- The Distribution Element may be thought of as a "container".
- It provides the information to route "payload" message sets (such as Alerts or Resource Messages), by including key routing information such as distribution type, geography, incident, and sender/recipient IDs.



Tactical Situation Object OASIS-FP6

- The goal of the TSO is to allow different agencies to exchange tactical information during an emergency, so that each involved rescuer has a good and common knowledge of the status of the operations
- ACC/ACCTRF/HIGHWAY/MOTTUN
- ACC = an event of the type Accident
- ACCTRF = an accident of the type Traffic Accident
- HIGHWAY = a traffic accident which occurred on a Highway
- MOTTUN = the accident occurred inside a tunnel



• <http://www.oasis-fp6.org>

AN EXAMPLE OF CML

➤ SITUATION

- We now have lots of snow
- We know that snow will melt and become water
- We know that a region in Sweden often get flooded during spring
- We know that we In May will watch the news and hear people say that they are in need of sandbags and that they have been promised sandbags but they are absent...
- TECHNOLOGY: C2 systems, Taxi, Mobile phones, GPS

➤ NEED

- There is a need for coordinated transports of sandbags (Logistics)

➤ SCENARIO

- During flooding
 - someone requests more sandbags
 - someone transports sandbags
 - someone needs to route the transports

EXAMPLE OF CML SENTENCES

- REQUEST from First Responder (PMG) to Coordinator (C)
 - PMG request transport of sandbags to area X
 - REQUEST → WHO:PMG WHAT:Transport of sandbags WHERE:to area X (implicit)WHEN:now (implicit)WHY:stop flooding
- C to TAXI via their inbuilt text messaging system
 - Go to A and fetch sandbags and deliver them at X via route R no later than now+2h, if estimated later report arrival time to PMG
 - When approaching X report further availability to C in order to support further planning and for assignment of another transport task
 - TASK → WHO:TASKER:C WHO:TASKEE:TAXI WHAT:pickup sandbags WHERE:City A WHEN:before TASKX2 ID:TASKX1
 - TASK → WHO:TASKER:C WHO:TASKEE:TAXI WHAT:move WHERE: along route R WHEN:Before TASKX3 ID:TASKX2
 - TASK → WHO:TASKER:C WHO:TASKEE:TAXI WHAT:deliver sandbags WHERE:to area X WHEN:nlt now+2h ID TASKX3
 - CONSTRAINT → IF EXPRESSION:time>now+2h THEN ACTION:REPORT:Arrivel time
 - REPORT → WHO:TO:C WHAT:Availability WHEN: before TASKX3 WHY:in order to support ACTION:planning WHY:in order to support WHO:TASKEE:TAXI

MAPPING GRAMMAR - TSO

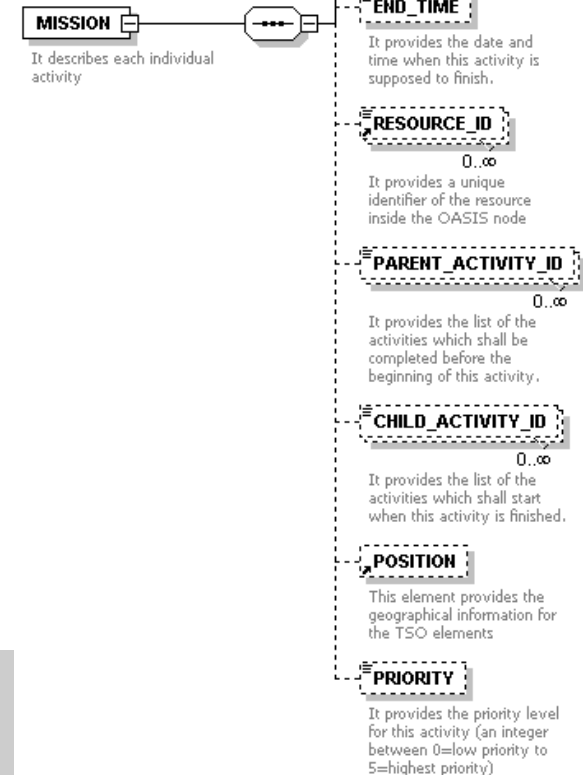
➤ TASK → WHO:TASKER:C WHO:TASKEE:TAXI WHAT:pickup sandbags WHERE:City A WHEN:before TASKX2 ID:TASKX1

➤ CONTEXT

- **MODE:** EXERCS
- **MSGTYPE:** ALERT
- **LEVEL:** TACTCL

➤ MISSION

- **ACTIVITY_TYPE:** GEN/SUPRTN
- **DESCRIPTION:** pickup sandbags
- **STATUS :** NST
- **RESOURCE_ID:** TAXI
- **CHILD_ACTIVITY_ID:** TASKX2
- **POSITION:** City A



BUT ...

- There is no common
 - **civil planning processes** – even if there is development within ISO/TC 223, i.e. there is no equivalent to the Military Decision Making Process (MDMP), Integrated Dynamic Command and Control (IDC2), Operations Planning Process (OPP)
 - **vocabulary** – even if TSO is promising
 - **doctrine**
 - **set of symbols**
- Thought of Public Private Partnership Agreement– even if different nations are addressing it
- There are few digitalized systems in use

WAY Ahead

- European Union Framework Program 7 - Integrated Mobility Security Kit (IMSK) – will use a subset of a CML based on the TSO concept
- But first – Organizations need to
 - Train Civil Crisis/Emergency Management
 - as an ongoing process of risk awareness
 - to handle both small and large crisis
 - to discriminate between harmless incidents and major crisis.
- Therefore – Supporting Technology need to provide
 - an ability to produce flexible scenarios for social simulation games
 - training systems that do **not** require a vast group of people that answer the courses of action taken by the trainees
- CML as a sister to C-BML is one way of providing mechanisms to build such supporting technology both for training and for operational systems
- Even though CML (will) reuse concepts, formalisms and also training implementations from C-BML, there is still a need for more experiments and demonstrations focusing on CML



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